

US010210048B2

(12) United States Patent

Sancheti

(10) Patent No.: US 10,210,048 B2

(45) **Date of Patent:**

Feb. 19, 2019

(54) SELECTIVE SNAPSHOT AND BACKUP COPY OPERATIONS FOR INDIVIDUAL VIRTUAL MACHINES IN A SHARED STORAGE

(71) Applicant: Commvault Systems, Inc., Tinton

Falls, NJ (US)

(72) Inventor: Ashwin Gautamchand Sancheti,

Ocean, NJ (US)

(73) Assignee: Commvault Systems, Inc., Tinton

Falls, NJ (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 73 days.

(21) Appl. No.: 15/334,127

(22) Filed: Oct. 25, 2016

(65) Prior Publication Data

US 2018/0113623 A1 Apr. 26, 2018

(51) **Int. Cl.**

 G06F 12/00
 (2006.01)

 G06F 11/14
 (2006.01)

 G06F 9/455
 (2018.01)

(52) U.S. Cl.

CPC **G06F 11/1451** (2013.01); **G06F 9/45558** (2013.01); **G06F** 2009/45575 (2013.01); **G06F** 2201/84 (2013.01)

(58) Field of Classification Search

CPC G06F 3/065; G06F 3/0664; G06F 3/0619; G06F 3/0673

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

4,084,231 A 4,267,568 A 4,283,787 A 4/1978 Capozzi et al. 5/1981 Dechant et al. 8/1981 Chambers (Continued)

FOREIGN PATENT DOCUMENTS

EP 0259912 3/1988 EP 0405926 1/1991 (Continued)

OTHER PUBLICATIONS

Arneson, "Mass Storage Archiving in Network Environments" IEEE, Oct. 31-Nov. 1998, pp. 45-50.

(Continued)

Primary Examiner — Gurtej Bansal (74) Attorney, Agent, or Firm — Commvault Systems, Inc.

(57) ABSTRACT

System and techniques for performing selective snapshot and backup copy operations for individual virtual machines in a shared storage. The system can include a hypervisor configured to create and operate a plurality of virtual machines. The system can also include one or more shared physical computer storage devices communicatively coupled to the hypervisor to store the plurality of virtual machines. A plurality of storage volumes can be provided in the one or more shared physical computer storage devices, each storage volume uniquely corresponding to one of the virtual machines. The system can also include a virtual server agent configured to issue a command to the hypervisor to perform a snapshot or backup copy operation for a selected one of the plurality of virtual machines without performing the operation for any other unselected virtual machine in the one or more shared physical computer storage devices.

20 Claims, 13 Drawing Sheets

